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# Ceramic wall reliefs for church interiors and exteriors

Sherwood Smith

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CERAMIC WALL RELIEFS  
FOR CHURCH INTERIORS  
AND EXTERIORS

by

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May 28, 1964

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## PART ONE



## PREFACE

The purpose of this thesis is to execute a series of five ceramic wall reliefs. These reliefs will be made abstract through the use of symbols and will attempt to give connotative ecclesiastic meaning in church surroundings.

The religious arts today are undergoing many changes in the areas of painting, sculpture, wall reliefs, and the graphic arts. Modern man has seen fit to emerge from the traditions of the past, to the more expressionistic religious art today.

Man in the past centuries illustrated his works of art in the churches so that they would be intelligible and easily recognizable to the unenlightened people of that era.

One of the most interesting arts to gain stature in the area of religion, has been the sculptures and reliefs which are being employed in the interiors and exteriors of churches and synagogues.

Many people however, view this art with very little understanding and sometimes reject it without further investigation or study. As our culture progresses in the fields of education, and in the appreciation of the arts, the artist has kept in stride through his use of imagination and technological resources.

The artist can produce meaningful presentations in the church, by using a variety of materials and artistic skills. His creative genius is an asset in producing fine religious art for the church communities.

There are instances when the artist creates a seemingly baffling style of art for a place of worship, namely art that is close to being classified as pseudo-abstract. The craftsmen does not intend to mystify, or distort religious art.

This work is actually an indictment of the artist's affirmation for his art creations. There is acceptance only if the work is given a chance to show it's honesty and spiritual values.

The wall relief has come into its own as a form of artistic expression. Wall treatments are somewhat in demand because of the simplicity of the church architecture, and a need for embellishment in the very atmosphere of the contemporary church.

These areas need to be given vitality, freshness, movement, not a dull conventional or sacchrine prettiness.

Whether the material be wood, clay, plastic, metal, or woven goods, the relief should contain a certain meaningful expression, which should be original, and significantly religious.

The sculptor who may be commissioned to do a religious wall relief, or sculpture, must consider two ways

in which to organize and eventually execute the work. The first way to be considered is that which is abstract or semi-abstract. An implicit type or abstract handling, is that which expresses the artists sensitive and realistic search of ultimate meaning and significance in terms of his own culture. This would mean the artist could devise, invent, other forms rather than employ the recognizable subject matter, or any traditional symbols of religious meaning.

Picasso's "Guernica", is certainly religious in this sense, because it expresses so honestly and powerfully modern man's anguished search for ultimate meaning and his great revolt against cruelty and hatred.<sup>1</sup>

The second way for consideration on the part of the artist, is the explicit art work. That which expresses the artist's search of ultimate meaning with the aid of recognizable religious subject matter, or religious symbols, and familiar materials of some historical religious traditions. But direct use of these forms can in no way, guarantee either artistic or significant religious expressiveness in the contemporary church.

1 Department of Worship and Arts, National Council of Churches



The material clay has the unique properties of being plastic, colorful, and strong. It can be used in almost any form of three dimensional murals. This means that the values of the positive and negative areas, can play an even more important role within this sculptural media.

When the sculptor works with a ceramic material, he takes in consideration his limitations in the technical control of the material. From this he can continually strengthen his weak points of his design. All of these technical skills are not acquired in a given time, but rather through a continuous growth of experimentation and learning.

When an artist accepts an undertaking such as a mural, regardless of its dimension, he must make a plan or scheme which will enable him to cope with weaknesses in the design.

This procedure extends from initial discussions and conferences with the clergy, to small sketches which will help visualize and improve the idea on through the drawing sessions. As the drawings become more positive in meaning, the final full size drawings may be transformed into a workable concept, and this can be

aided with paints, chalks, crayons, etc.

Now that the artist has the cartoons readied, he will procede with clay sketches, and they can vary in size, anywhere from inches to feet, depending on the design.

As these clay sketches become more detailed in meaning, the overall scope of the mural and its eventual development are now understood more clearly by the craftsmen.

There are two possibilities in which the mural can be started, and that is a slant position or flat against the floor or ground.

If the slanted position is to be used, an easel must be built strong enough and high enough to hold the weight of the clay. Wooden strips or steps can be fastened to a plywood sheet to assist in supporting the clay and to keep it from shifting position.

A light frame may be used to border the initial work, this will help maintain the dimensions of the design. Sheets of burlap can then be put over the board to keep the clay from sticking to it. Usually, clay should not extend more than a half of one foot, from the plywood surface because it may become frontal heavy and slip off the board.

When the clay is stuck fast against this background, the next step would be to pound with a burlap covered mallet, the entire clay surface, this will eliminate a number of air pockets and irregularities within the clay.

The edges of this flat mallet lend interesting effects to the clay body. Pounding the clay with the sides or the palms of the hands will help mold the clay into a fine workable condition.

Another way for starting a relief could be flat against the ground with a plywood backing. The disadvantage with this plan is that it is difficult to view the progress of the mural in this position. However, a tall ladder or balcony porch over looking the work area might remedy this situation.

Heavy plastic sheets and large cloth coverings which can be dampend will keep the clay slabs moist at all times. This will prevent cracking along the edges, which are closer to the air currents in the studio. Clay in the floor position will not dry as fast because of the coolness of the air at the floor level. Clay on an easel is in a warmer zone therefore should be closely wrapped when not modeling on the relief.

Clay has a tendency in this state to pull away from the board along the edges and this causes the cracking. But if moistened properly throughout the working period this can be easily eliminated.

Since the ceramist has his media spread before him, he can visually and physically change the contour of the ceramic relief. Distant viewings will help derive a better sense of overall evaluation of the improvements as they appear in clay and not in the drawings which are two dimensional graphic presentations.

Upon conclusion of the actual modelling on the relief, the artist must cut the whole into sections so that when the tiles are dried and eventually fired they should be able to fit almost perfectly. It is best to cut the sections at a angle from the initial cut, this will appear to make a "A" division between the two tiles, but only one cut will actually show. Then the tiles must be carefully extracted from its background and laid on a very flat surface. See Fig. 1

Immediately after this procedure each individual tile must be hollowed out on the backside and a lip or ridge left along the outer border, this will lighten the tiles and produce better fired pieces. If the pieces are exceptionally large a cross shape on the



backside must be left and four hollow compartments will exist instead of one large space. These walls can be trimmed with a fettling knife and trimming tools.

The tiles should be marked in a particular order so that when it comes time for final assemblage, the pieces will fit accordingly.<sup>2</sup>

Then the tiles should be allowed to dry slowly and if possible blocked up on drying racks so that the air will be able to circulate under the sections. This will speed up the drying time of all pieces.

The craftsman can line up all the tiles on a large board and arrange the color patterns with slip or stains. After the slip has dried, the tiles are ready for loading into the kilns, in my case the firing was done in a up draught, Alpine gas kiln.

The tiles are shelved so that adequate flame and circulation will exist in and around all the tiles. In some instances when a reduced atmosphere is required in the firing, the top damper plates are close together. If a lighter coloring is preferred on the tiles, the damper plates are kept open all the way through the firing cycle, allowing a complete oxidizing atmosphere. Spaces should be left between shelf partitions for even

2 White slip brushed on the inside of the tile, then the number painted on with black slip.

heat absorption into the tiles. The firing cycle of greenware tiles is very slow and gradual all the way to turn off time. Usually the firing is started in the evening or late afternoon, and allowed to heat up to about 1200 F. by the following morning, without the use of the blower until the very late stages of the firing.

Fast firing and blower blasts may cause warping or cracking in the tiles. This could mean making certain sections over again.

When the firing is completed the pieces which are now bisqued, can be assembled and examined for fitness. Slip colors are checked for their intensities, cracks and warpage at this time are repaired and corrected in the best way.

Glazes or puddles of glazes, chunks of colored glass, can be employed into the plan of the relief design. For the best results all tests with puddle glazes and glass must be carefully studied before the final application.

When puddle glazes are used it is important to fix any openings or cracks with a cement which can be fired to high temperatures and not separate from the openings.

Otherwise the glazes are apt to run through and cause damage to the shelves, the kiln, and possibly the other tiles.

After this firing is completed the tiles are arranged according to the design and now must be considered on how they will be affixed to the wall. There are several ways in which to fasten the pieces to a wall surface.

The first way is to glue the sections to a one inch thick plywood surface and grout the gap areas in the relief. This entire plywood sheet can then be bolted to the wall. If the forms in the relief are quite irregular the wooden pieces could be cut individually and bolted to the wall.

Tiles maybe wired on the backside and filled with plaster of paris, the wire then can be looped around the nails or pegs in the wall. Plaster grout again could be applied around the tile sections in the mural.

Small openings or holes can be made in each tile from the front side and then they can be either bolted or nailed with mason's nails from this side to the wall.

Another possibility would be to fasten the ceramic tiles to the plywood by gluing and then bolting the pieces to the wall.

When the gluing on the sheet becomes too difficult one can groove the plywood with a electric router and then set the tiles edges into the grooves and glue securely. If the tiles are light in structure they can be glued directly to the wall and if need be grouted in the remaining areas.

There are probably many other solutions in hanging a ceramic wall relief, but these are a few that have proved successful in this art work.



There are evidences in our church communities that indictate a gradual letting down of church rigidity toward the arts of an abstract charateristic. This has led to an increased reawakening of the artists interest in religious art. The work of The National Council of The Churches of Christ in the United States which governs the Department of Worship and The Arts, has helped tremendously to publicize the need for contemporary art in our churches.

People are becoming more aware of this renaissance in religious art. It is quite evident in the recent church architecture and the art that is adorning these buildings.

Appreciation and understanding of these visual arts that are being used in a religious capacity has actually given man many magnificent spiritual forms both semi-abstract and abstract in design.

The Department of Worship and Arts in America, has stated recently "while the life of the artist offers many analogies to the life of faith, it is the responsibility of the church to articulate its understanding of man and his destiny which enables man to be a person and express the freedom of man. Religion has depth which art needs lest it become tempted to estheticism. Religion

on the other hand, is expressed most profoundly through the forms which constitute the proper concern of art."<sup>3</sup>

Most modern artists are using a contemporary form in their visual arts. But in the opposite camp, we have the artists who rely on practicing the traditional arts. The problem that exists is that in the traditional concept, those artists are generally opposed to modern art.

Subject matter and stylizations in art historically conditioned, cannot give a final solution. The historical order of traditional art has many Epochs and periods of certain styles. These traditional modes of art have had some influence on our present day religious art.

To name a few, "Pre-Romanesque," "Romanesque," "Baroque," "Gothic," has conceivably had some impact on the contemporary religious arts.

The artists of today are practicing in two areas of visual representation within the framework of religious art; these modes of art can be termed as the Naturalistic or Expressionistic approaches.

The Naturalistic idea is a style which idealizes the realm of nature, as a form of objective and personal observation. A way of idealizing human forms and interpret nature as a reflection of lost paradise.

The aim in the Expressionistic art is really to express subjective emotion and human forms are used as a sign or symbol. This concept is religiously strong<sup>4</sup> and yet can eliminate the natural physical likenesses.

These aspects relate partially or wholly to realism, the first one being the tangible and the second the spiritual reality.

As the Expressionistic and Naturalistic ideas are developed so may be the cultural patterns within these epochs of art. The artist is therefore, always producing a continuance of art of religious purposes.

The Christian art of the catacombs sometimes classified wrongly as primitive forms and the art work of the Hittites, Egyptians, are certainly expressionistic. Naturalistic forms in religious art seem to be the later approach which illustrates to a strong degree scientific concern and technical perfection in the works.

Modern man has explored most discoveries of art of the past centuries, but with this knowledge and research has confided in the experimental expressionistic art of today.

<sup>4</sup> Ibid



The American people are continually confronted with abstract art in different forms of painting, wall murals, sculpture, tapestries, draperies; this ecclesiastical art has been done with an acute awareness and purpose for placement in the churches and temples.

A cause for laymen's dissatisfaction on abstract art has been the lack of good working relations amongst the artist, architect and clergy. The building is usually designed and built and then the artist is called into the situation. The odds are that his particular art renderings will be lost in the situation because of the physical dictations of the interior and exterior design of the building.

If churches are to hold abstract art of religious significance, the art work must not only be well conceived and executed, only then it can become an integral part of the architecture.

Abstract and semi-abstract murals, sculptures, in a church or temple, are put there to express religious spiritual values.

Since religious art does not have a "style" but rather a historical past which in a way governs the contemporary conditions in art, an acceptance by the





The individuals that reject the abstract art in the houses of worship are actually unaware of what the particular expression the artist has intended, and hence, a misconception will occur and the honest, original religious idea is almost totally lost.

This misconstruing of modern art is the feeling of people who claim that these art works are mumbo jumbo from deepest Africa, and not worthy of church exposure, because they are not inspirational.

The qualities that might exist in certain religious abstract art are sometimes so subtle in appearance, and seem to rest on a rather non-objective plane, there maybe some validity in this thought.

However, some clergy are actively supporting the good examples of murals, sculptures that are being used in the present churches and temples.

But there are stipulations in this course of acceptance for any art that is used for religious purposes. One is that the art should exemplify all the beauty, greatness of meaning, and sincerety of its function. Secondly, the religious art involved would not be distorted in anyway and the truth within the theme of the motif would be an honest holy interpretation.

## PART TWO

In the preparation of observing and photographing architecture and art of churches and temples in Western New York, I discovered that only a few contemporary designs in the buildings had much effect in continuity of design between the architecture and the religious art renderings.

When I observed these buildings, I considered many aspects of this particular church architecture, both exterior and interior, location of the buildings, materials used in the constructions, and the esthetics that were involved within, and including the relationship to the arts.

Consideration must be given to the arts in architecture so that the wall murals, stations, screens, altar pieces, and other sculptural arts used in these sanctuaries of worship, will become meaningful.

When I viewed the churches and temples I felt satisfied that the art presentations were of good quality designs and in some instances were excellent as a motif and the execution of the materials, craftsmanship, certainly rendered to near perfection.

One interesting note was that most of the good contemporary architecture and art constructions in the



Western New York vicinity, have been done within the last five or six years. This is due to several reasons, which might include the growth in population, increase in church membership, more funds to build better buildings, and the most important factor could be the awareness of art in the church and community.

I spent time with certain clergy of the different faiths, as well as the working construction men on the new churches. Some of my discussions were centered around both the architecture and the arts. I talked with some of the building contractors and the artists that were involved in the completing of the sculptural aspects.

The clergy of one faith felt that the designs in some of the new churches was too overpowering, and the same was felt for the art that embellished these units of church architecture.

Yet, some clergy explained that the changes in the designs of both the buildings and the arts was actually a new visual showing of our culture in its progressive stages.

A priest of a Catholic Church thought that some of the church buildings looked like barbells attached together.

But in most instances the people who attend these places of worship, feel very strong and proud to congregate and pray in these beautiful churches and temples.

Upon entering these places of worship, I thought that most everything that was done in an art way, was well executed in form and spiritual content.

The ceramic reliefs that I studied were very suggestive in their symbolic form. In a few examples some of the ceramic murals carried a slight semblance from traditional stylizations, (19th Century styles.)

One of the reasons why traditional styles are still being used is that the artists, clergy, and the architects, seem to handle the art works as if they were of second importance. I think most of the fault lies with the artist for accepting these commissions which have so much dictation attached to the art.

Another reason for this conformity in church art, seems to be the architecture itself. In one case which involved the Stations of the Cross, the artist had to design wall stations that would fit within the already formed brick semi-circles on the wall.

There is no doubt that many new solutions will be discovered and available for use in ceramic murals and sculptures. These findings will assist the artist in collaboration with the work of the architect.

When I started constructing ceramic reliefs, I had considered all of the qualities of this plastic material. I discovered that the weight of the material could be eliminated to a certain point by making the tiles thinner, and hollowing out the backsides to a fine proportion.

Through research in testing clay bodies, grog materials, in greenware, bisque ware and high fired ware, I decided in using two different clay body recipes. The first body consisted of the following materials:

Jordan clay	33	parts
Redart	"	"
Goldart	"	"

The second recipe:

Kentucky "Special"	25	parts
"XX" Sagger	25	"
Redart	50	"
Goldart	50	"

White coarse grog was added to each batch, at fifteen percent. This added strength, cut down shrinkage, and gave the clay bodies an interesting texture.

In my first mural design I used the theme "Birds", which I thought might have been the last creatures on



earth that Christ might have heard before he died on the cross. I modelled three birds of a semi-abstract form, that were in the act of flying in a loose circular pattern in space. The relief was about three by four and one half feet in size. The clay tiles were fired bisque first and then again to cone five reduction in the Alpine gas kiln. Most of the colors in the clay ranged from light yellowish brown to tan-medium brown. Some warpage occurred in the last firing but most of these thin tiles fired satisfactorily.

As a theme and relief I thought it was successful as an experiment but not as a final solution for this unusual theme.

In the second undertaking I designed a "Sun" with the same stoneware body, (Jordan-Redart-Goldart), and the result in most aspects was successful.

The tiles were constructed from a concentric apex. This type of motif design had to be arranged so that the general scheme could expand in a rather circular motion, but still give the relief a jutting out effect of the ray-like forms, which symbolize the light rays of the sun.

In the center of the "Sun" I used puddle glazes and small chunks of Blenko glass and the result was

an emerald green, quite dark like that of our sun.

Photograph # 1

The remaining areas around this star burst center, were done in variations of blue puddle glaze. All the sections that contained glaze were slipped heavily so that the fractures in the puddles would show clearly.

The actual shaping of the rays of the sun were bold and heavy in application. One of the reasons for extending dimensions on the actual clay piece is to allow for shrinkage, which has a median of about twelve per cent. These sections were fired in a reduction atmosphere to cone five. There were extreme variations of color in the bodies, but most of the tiles appeared rust red to deep brown.

The overall effect of the mural seemed to be that of a starry, illuminated, and orbital movement. A feeling of distance, heat, and energy seemed involved in this relief.

All of these tiles were mounted against a plywood sheet that was painted flat white, and marble white chips were glued (colorless), in and around each piece. This background simulated the quality and richness of the ceramic material. Photograph # 2

After the completion of the "Birds" and the "Sun", I decided to embark in a totally new direction both in aesthetic and technical design application within the stoneware clay.

In this third relief I used a grogged stoneware which was better incolor, had less warpage, and a little more color variation in both oxidation and reduction firing. This clay body (Kentucky Sp., XX Sagger, Redart, Goldart) would vitrify at about cone six, depending on the amount of grog on the surface.

I applied the clay to the burlap covered board, by throwing small wads of clay against it, I then approached the modelling in a different way. By using the wooden mallet to pound the clay, I proceeded in working the material as it was primarily formed by the throwing to the board method. In this direction I discovered that the movement of the clay was from side to side. The irregular planes extended from high to low relief, and this helped control the design so that it would not become too busy in its movement.

As the clay was formed into wavy lines and planes, the design took on an appearance of forms from the sea, with high planes symbolizing breakers. (Sea of Galilee)

In continuing on the relief I arranged smaller symbols within the larger units for better continuity. The development in my procedures became more spontaneous in the relief. This led to an increase of unusual symbols in both the larger and smaller wave areas.

In reference to my theme, "Sea of Galilee", I completed the water forms and symbols on the relief.

After I studied very carefully the interesting and repeated shapes on the relief, I eventually decided to use one large fish symbol instead of many smaller fish shapes. Photograph # 3

When I constructed the fish I made it concave in form with a white slip texture. Since the colors in the wave forms were blue, blue green, white, black, I felt a need for bright colors on the fish. I applied chunks of high fire Bausch and Lomb glass, in colors of red-orange and yellow. The glass was melted to only a soft bubble and not allowed to run and puddle on the flat surface.

I cut out an area on the relief at the upper half, so the fish shape could become an important part of the mural. I used this clay blank for mounting the fish.

With three murals completed I devoted more time to serious sketching of abstract shapes and forms. Most of



the sketches contained figure-like forms and growing shapes. I used these flora forms and seedlike symbols to develop my next relief. Reference was made to the Old Testament of the Bible, Genesis 1: 11-12

This relief was the largest of the six that I had completed. It was four by six feet on the easel board. Since this mural was larger and heavier, I nailed wooden steps onto the surface of the board to help support the clay; about four hundred pounds of clay was thrown to and pounded to the backboard.

My chief concern was to begin in the immediate center of the large clay slab. As I progressed into roughing the shapes, the planes of the relief became more important because of the complexity of the design.

The forms at first were very difficult to relate to each other, and the use of the rectangular shape of the background became even more of a problem. Circular forms seemed to be boxed in and somewhat cramped. However, once the center form was rendered, (branch-like plant), the shapes around it seemed to grow from the plant.

The flora designs moved vertically in a twisted manner strengthening the figure form on the left side. The seedlings and stems were organized so that they literally grew around the figure and into the background.

I pounded with care the leaf designs so that each large leaf would extend to the edge of the mural. In doing this it released the tension of too many similar shapes in one area.

After accomplishing this phase, I assembled the lesser details within the design by pounding with the mallet, and formed oblong patterns of various sizes, but all within one side of the mural. This generated a quiet section in contrast with the moving figure form and the plant designs. Values in this unit were very strong due to the spaces between the oblong pieces.

Before I fired the fifty tiles that made up this relief, I took the large areas that were relatively flat and covered them with a watered down wash of white slip. In the firing all the tiles were reduced at cone five, the areas with slip came out very nicely, as the burlap texture held the fine outlines of slip as contrasted to the dark surface caused by the firing.

In all there were two large sections which were puddled with glaze and chunks of glass. The colors ranged from amber, blue, yellow, dark blue, bright red, over the white slipped sections. This Bausch and Lomb glass with its higher firing range seemed less smooth than the Blenko glass from West Virginia. The reason for this seems to be that the Bausch and Lomb glass seems

much harder and probably has a higher content of silica, hence a higher firing to puddle and fracture.

I gave this mural the title of "The Garden" because of its semi-abstractness of flora, seeds, etc.

#### Photograph # 5

Mural number five was done in my basement studio. In doing this relief I used my cellar floor for the backing instead of the stand easel.

This relief was the most abstract of all. The mural was seven feet in length and about two and one half feet in width. There were many advantages in using the basement for my work area. The dampness always kept the clay in a plastic state, I could easily view the relief from a stand, and when it came time to cut the mural into tiles, the pieces were easily removed by sliding them apart.

But the main reason for constructing this mural on my premises was so I could design without any critique from other persons, so my drawings would be uninhibited from outside exposure. In some respects I felt it was a success.

As I developed my sketches, I thought mainly of "Growth". When I began the work, clay was thrown and packed to the floor that was covered with heavy plastic sheets. I piled clay into lump sections and then hammered them into forms and shapes of a rough quality with



some forms being quite thick, others tapered into thinner planes of high relief. In a few areas I flattend these larger forms so they would lean away from the line of the center plane. The rest of the undulating forms extended in mostly a top to bottom movement, with the slanted sides ranging from a quarter of one inch to as much as seven inches. This overlapping between the edges resulted in a rhythmical movement between each large form.

In this method of constructing a ceramic relief, I found that holes could be perforated through the front of each tile, (because of the flatness on the planes), and then fastened to a wall or backing by using mason's nails, bolts, or other fastening devices. A colorant could be coated over the bolts or toggle heads to conceal them into the ceramic setting.

The tiles were fired at cone five oxidation in the electric Unigue kilns. Most of the coloring at this firing temperature was a brown-buff-gray matt. After completing the cycle of firing all the tiles, I assembled the mural on the floor. I decided the mural needed a coloring effect that would be textured, but still retain a ceramic surface.



I applied various thicknesses of Amaco cement over the tiles. The cement was in a wash liquid state and application was done by sponging the wash directly to the tile sections. The results in the firing were handsome in both the yellowish coloring and the fine texture. Its general appearance is rough, earthy looking, and gives the relief a soft, warm, moody quality. Photographs # 6-8

As I approached my last problem in designing a ceramic relief, I considered a particular theme from the New Testament, St. Mark 6:38-44, The Feeding of the Five Thousand.

In my particular concept of this theme I included only the loaves of bread and not the two fish as told in the bible. I related from my sketches a design much smaller in dimension, three and one half feet in height, and four and one half feet in length.

In the clay layout I placed the shafts of wheat in a continuous pattern moving the planes from side to side, and somewhat angular directions. Some of the shafts were crossed one on top of the other, intermittently through the design.

The loaves were formed with my hands and the burlap

covered mallet. The shapes that evolved were semi-round and showed the fine texture of the burlap on these forms. Some of the loaves were opened into a contrasting negative areas as compared to the solid heavier loaves.

The working out of the loaves was carried to three different spaces in the relief. One series on the top right side, another group in the lower center area, and the last phase was constructed to the right center portion of the mural.

Again, the shafts of wheat were entwined partially around the loaf sections. Only in the very center part did I exaggerate the thicknesses of the shafts. The lesser shaft parts to the sides were much thinner in proportion.

When the loaf forms were pretty well along in development I creased a few of the forms to lend a crisp surface to the pieces. I scraped with a metal kidney tool some of the portions of the negative areas, this gave good contrast between the smooth and coarse tiles.

The background became more important as the work progressed. I added small circular disc shapes in and around the whole relief. These were battered into the background, showing only the shape and some value of thickness. These discs symbolized the kernels of wheat.

Before I cut down the relief, I divided the whole into approximately twelve sections, including large and small pieces. Their sizes ranged from twenty two inches in length to sixteen inches. The widths were from four to eleven inches. Depths of most tiles was about three inches. Because this mural seemed much lighter, I made straight cuts with a long knife to dismember the tiles from the board.

Upon examining the size of the tiles, and considering their weight and possibilities of extreme warpage, I cut a cross shape on the back of each tile. The cross itself was about an inch wide and extended to all four sides. When I hollowed the sections there remained four hollow compartments on each piece. Photograph # 9

I fired the tiles in a good oxidation atmosphere in the Alpine gas kiln, by leaving the damper open most of the way and using the blower only near the end of the firing cycle, which lasted about thirty two hours. Reduction coloring was present in only one tile, this resulted because the piece was at the very bottom of the kiln. Warpage, and openings were held to a minimum in both the hollowing out and the firing cycle.

The following clay body tests are divided into eight parts, and will include the complete percentages for shrinkage ( dry-cone 5 - cone 9), absorption in both oxidation - reduction firings.

OXIDATION		REMARKS
CLAY	Jordan and Goldart	
% H2O of Plasticity	33.3	
SHRINKAGE		
DRY	6.0	
CONE 5	12.0	white coloring, slight buff
CONE 9	14.0	white, gray tin color
ABSORPTION		
CONE 5	6.8	
CONE 9	1.7	
REDUCTION		REMARKS
CLAY	Jordan and Goldart	
SHRINKAGE		
CONE 5	12.0	gray, tan color
CONE 9	14.0	medium gray "
ABSORPTION		
CONE 5	.0	
CONE 9	.0	

OXIDATION		REMARKS
CLAY	Jordan and Redart	
% H2O of Plasticity	33.3	
SHRINKAGE		
DRY	8.0	
CONE 5	14.0	deep brown red color
CONE 9	15.0	muddy gray brown
ABSORPTION		
CONE 5	.0	
CONE 9	1.9	
REDUCTION		REMARKS
CLAY	Jordan and Redart	
SHRINKAGE		
CONE 5	14.0	gray, green light
CONE 9	14.5	rust red, slight green coloring
ABSORPTION		
CONE 5	.0	
CONE 9	.0	

---

OXIDATION		REMARKS
CLAY	Jordan-Redart-Goldart	
% H2O of Plasticity	33.3	
SHRINKAGE		
DRY	9.0	
CONE 5	14.0	very light orange brown
CONE 9	11.0	medium gray



## ABSORPTION

CONE 5	6.0
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CONE 9	.0
--------	----

## REDUCTION

## REMARKS

CLAY	Jordan-Redart-Goldart	mixed 50-50-50
------	-----------------------	----------------

## SHRINKAGE

CONE 5	14.0	medium gray brown
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CONE 9	11.0	brownish red
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## ABSORPTION

CONE 5	.0
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CONE 9	.0
--------	----

## OXIDATION

## REMARKS

CLAY	Kentucky Sp.-Sagger Redart-Goldart-	mixed 25-25-50-50
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% H2O of Plasticity	39.0
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## SHRINKAGE

DRY	8.0
-----	-----

CONE 04	11.0	pinkish color
---------	------	---------------

CONE 5	16.0	buff orange
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CONE 9	16.0	Gray brown
--------	------	------------

## ABSORPTION

CONE 04	14.5
---------	------

CONE 5	6.7
--------	-----

CONE 9	1.5
--------	-----

	REDUCTION	REMARKS
CLAY	Kentucky Sp.-Sagger Redart-Goldart	
SHRINKAGE		
CONE 04	not reduced	
CONE 5	14.0	deep buff color
CONE 9	14.0	deep brown
ABSORPTION		
CONE 04	not reduced	
CONE 5	.0	
CONE 9	.0	

---

	OXIDATION	REMARKS
CLAY	Kentucky Sp.-H.W.F.C. Redart-Goldart	mixed 25-25-50-50
% H2O of Plasticity	33.3	
SHRINKAGE		
DRY	9.0	
CONE 04	13.0	light pink color
CONE 5	16.0	brown buff
CONE 9	17.0	deep gray green
	REDUCTION	REMARKS
CLAY	Kentucky Sp.-H.W.F.C. Redart-Goldart	
SHRINKAGE		
CONE 04	not reduced	

CONE 5	14.0	red brown
CONE 9	15.0	deep brown red

## ABSORPTION

CONE 04 not reduced

CONE 5 1.5

CONE 9 .0

In the puddle glaze batches I excluded Kaolin, because of the high Kaolin content in my slips. Too much Kaolin resulted in a milky opaque puddle glaze.

## SLIP BODY (Rhodes)

Kaolin	25	NOTE: In all tests concluded, this slip can be applied to wet-dry-bisque bodies.
Ball Clay	25	
Feldspar	20	
Flint	20	
Zircopax	5	White - basic batch
Borax	5	Brown - 2-6% Fe <sub>2</sub> O <sub>3</sub>
		Blue - CoO $\frac{1}{2}$ -2%
		Green - CuO 3%
		Yellow - 10% Vanadium
		Violet - MnO <sub>2</sub> 1-5%
		Tan - Rutile 6-10%
		Black - Fe <sub>2</sub> O <sub>3</sub> 3%
		- CoO 2%
		- MnO <sub>2</sub> 2%

## PUDDLE GLAZES

## # 1-S

Li<sub>2</sub>Co<sub>3</sub> 25

Flint 25

Raw Borax 25

## # 2-S

Flint 25

Raw Borax 35

Whiting 15

## # 3-S

White Lead 60

Bainbridge 20

Nephsy 20

Raw Borax 20

Whiting 15

## # 4-S

Li<sub>2</sub>Co<sub>3</sub> 15

Flint 25

Raw Borax 35

Whiting 15

## # 5-S

Na<sub>2</sub>Co<sub>3</sub> 25

Flint 25

Raw Borax 25

## # 6-S

Na<sub>2</sub>Co<sub>3</sub> 25

Flint 25

Raw Borax 25

Whiting 10

## # 7-S

White Lead 25

Raw Borax 25

Whiting 15

Flint 25

Pearl Ash 10

## # 8-S

Li<sub>2</sub>Co<sub>3</sub> 17

KNO<sub>3</sub> 17

Flint 25

Raw Borax 17



### PART THREE

## CONCLUSION

In this thesis I have experimented with new symbols, techniques, and skills in executing these ceramic reliefs. These murals I thought were successful in design because of their explicit religious meaning. My presentations in this report are only a few of the many design solutions that can be employed in religious ceramic murals.

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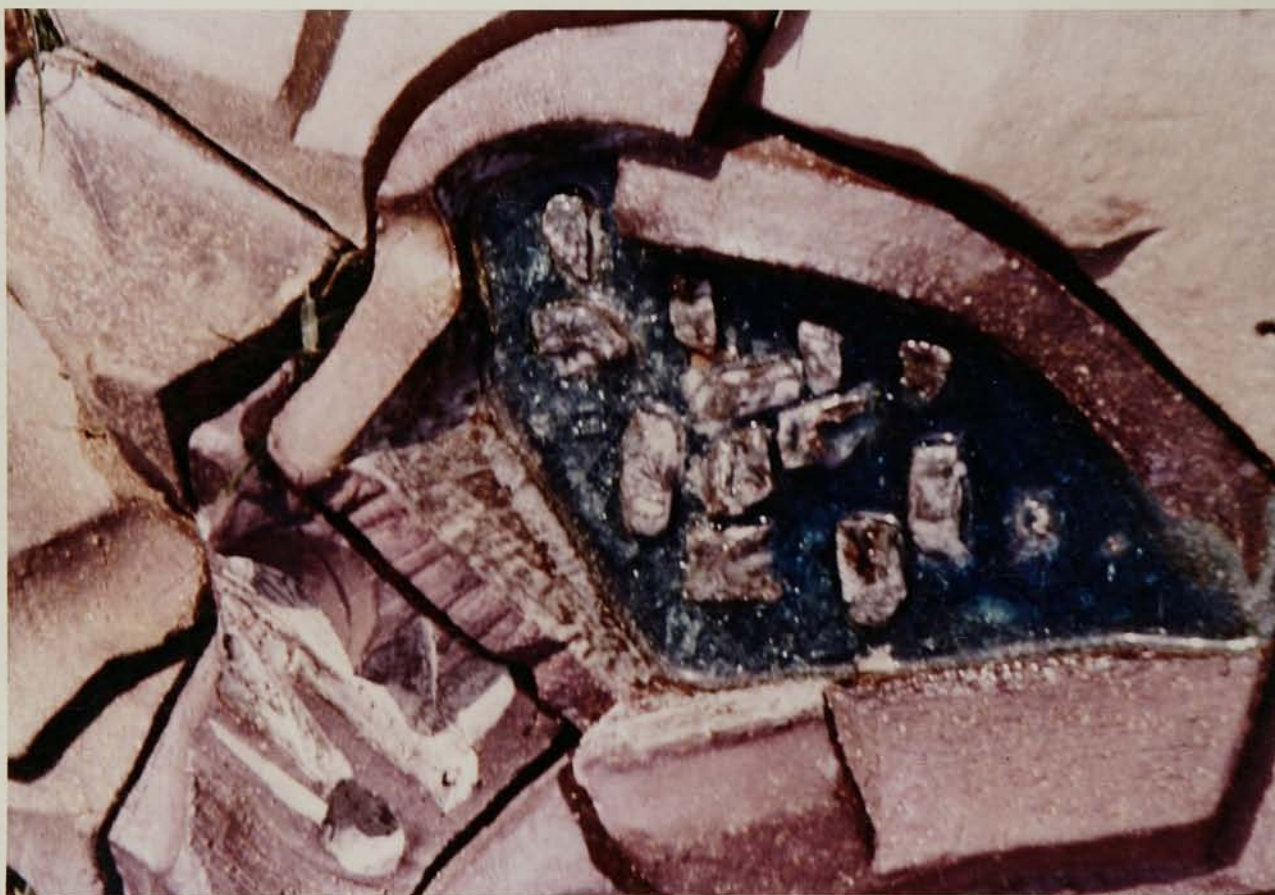
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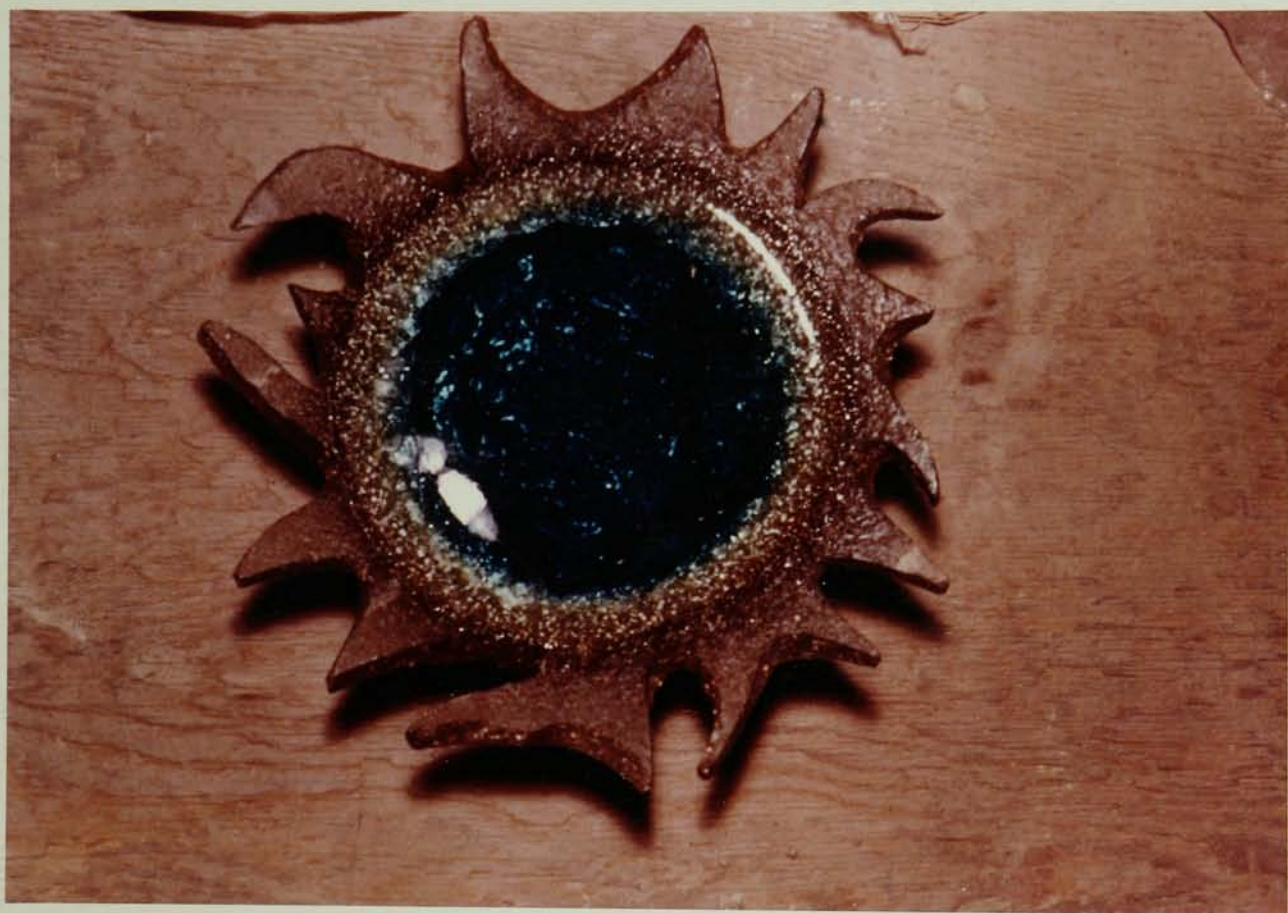




3 Fish Design  
by Author







1 Center of "Sun"  
by Author













6 "Growth"  
by Author



7

"Growth"  
by Author







"Growth"  
by Author





9 Cross design  
on back of tile.



















16 Side view of "Sun"

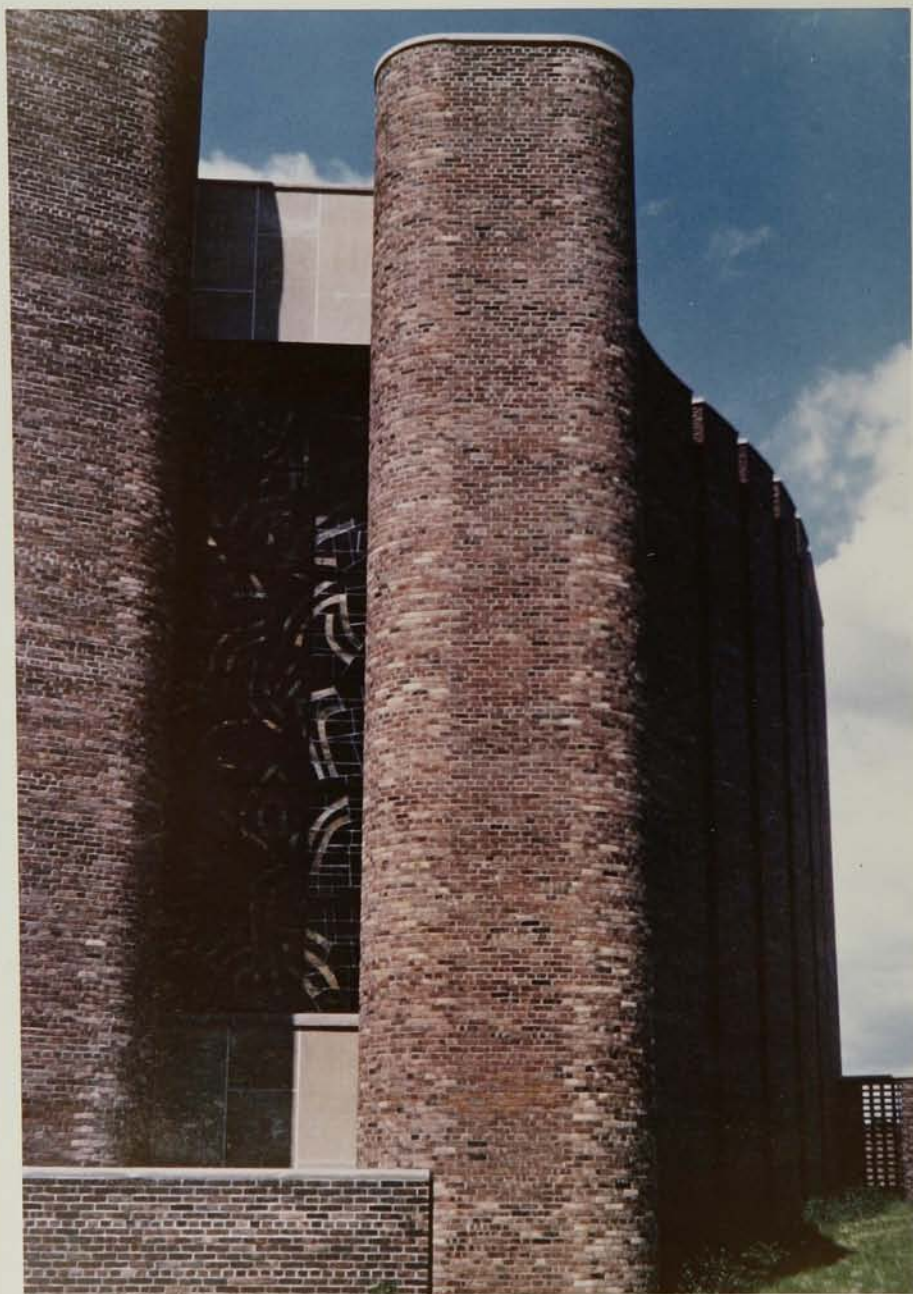


17 "Loaves"  
by Author





19 Temple Bethel  
Rochester, N.Y.





21 B'rith Kodesh  
Rochester, N.Y.





B'rith Kodesh  
Rochester, N.Y.



22 Greece Baptist Church  
Greece, New York



23 Church of Jesus Christ  
of Latter Day Saints  
Rochester, New York





Church of Jesus Christ  
of Latter Day Saints  
Rochester, New York





24 Processional Cross  
William Keyser



25 Ceramic Altar Screens  
Our Lady of Mercy  
Rochester, N.Y.  
Secrest Brothers



25 Ceramic Altar Screens  
Our Lady of Mercy  
Rochester, N.Y.  
Secrest Brothers





26 St. John  
Greece, New York  
(old church)





St. Johns  
New building  
Greece, N.Y.



St. Johns  
New building  
Greece, N.Y.

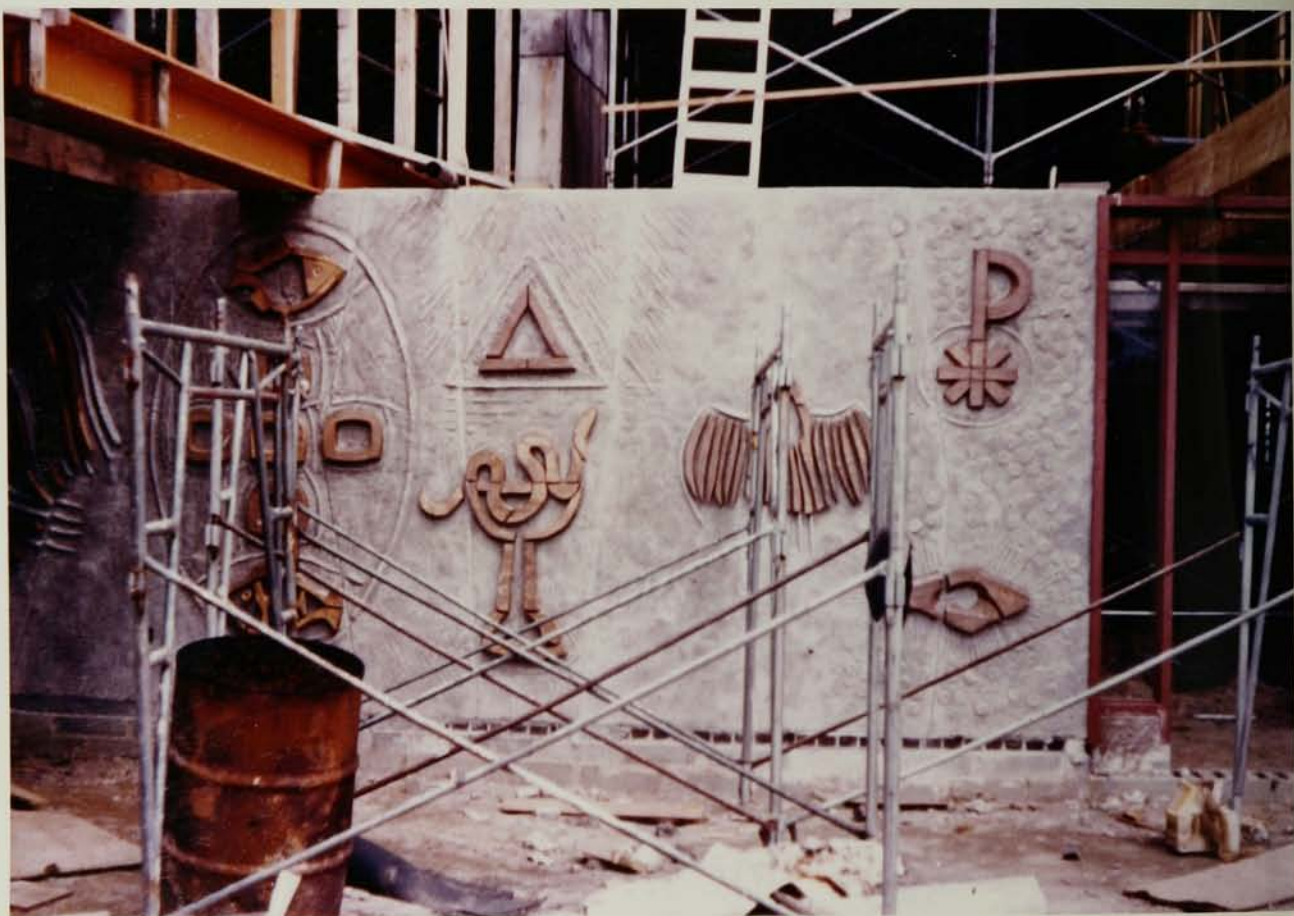


28 Ceramic Panels  
St. Johns Church  
Greece, N.Y.  
Done by the  
Secrest Brothers





Ceramic Panels  
St. Johns Church  
Greece, N.Y.  
Done by the  
Secrest Brothers



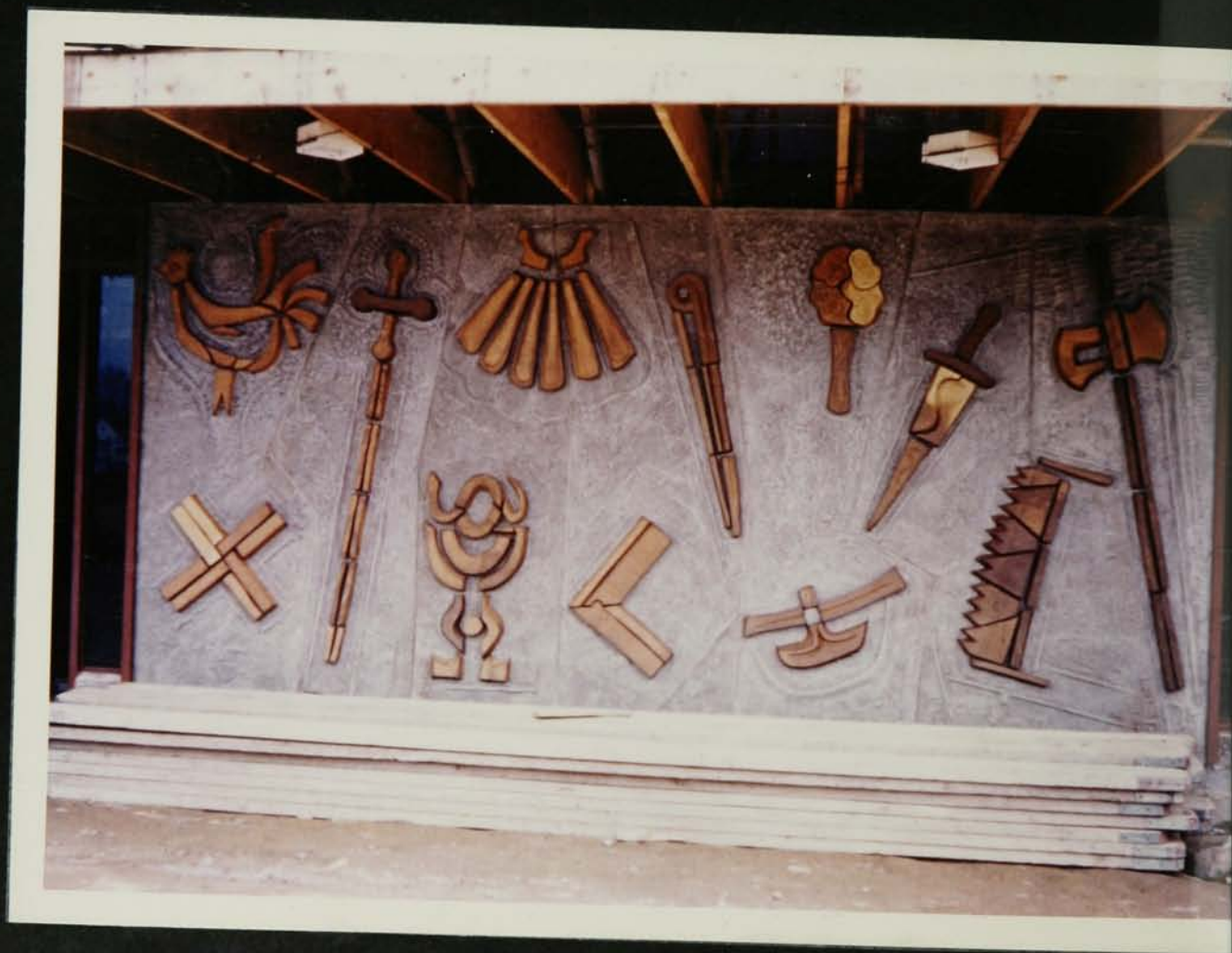
29 Ceramic Panels  
St. Johns Church  
Greece, N.Y.  
Done by the  
Secrest Brothers





Ceramic Panels  
St. Johns Church  
Greece, N.Y.  
Done by the  
Secret Brothers





30 Ceramic Panels  
St. Johns Church  
Greece, N.Y.  
Done by the  
Secret Brothers